DOCUMENT RESUME

ED 386 585 CE 069 841

AUTHOR	Strumpf, Lori; Mains, Kristine
TITLE	Work-Based Learning: Learning To Work; Working To Learn; Learning To Learn.
SPONS AGENCY	Department of Labor, Washington, D.C.; National Youth Employment Coalition, Washington, DC.
PUB DATE	Oct 94
NOTE	29p.
PUB TYPE	Viewpoints (Opinion/Position Papers, Essays, etc.) (120)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Competence; Cooperative Planning; Coordination; Curriculum Development; Educational Benefits; Educational Change; Educational Needs; Educational Objectives; Educational Policy; Educational Quality; *Education Work Relationship; Employment Qualifications; *Integrated Curriculum; Job Training; Learning Theories; *Program Development; School Business Relationship; Secondary Education; *Vocational Education; *Work Experience Programs; Youth Employment; *Youth Programs
IDENTIFIERS	Educational Marketing; High Performance Work Organizations; Secretarys Comm on Achieving Necessary Skills

ABSTRACT

This document describes a work-based learning approach designed to integrate work and learning at the workplace and thereby help young people develop the skills required for changing workplaces. The following considerations in designing work-based programs are discussed: the trend toward high performance workplaces and changes in the way work is organized; business definitions of quality; skills deemed necessary for the workplace by the Secretary's Commission for Achieving Necessary Skills (SCANS); the mismatch between skills taught in traditional learning environments and skills needed in changing workplaces; and the implications of learning theory for youth programs. Discussed next are the following: the purposes of work-based learning; differences between traditional and learning-rich programs/approaches; nine key elements of learning-rich work experience; supervisor/crew leader and student roles in work-based programs; guidelines for selling the work-learning approach to students and employers; things worksite supervisors should know about work-based learning; key ingredients of work-based learning; and ways the U.S. Department of Labor can support/encourage work-based learning. (Appended are the following: chart detailing the differences between conventional and high performance work organizations; lists of SCANS competencies and foundation skills; and description of a project in which youths plan a radon testing program, conduct radon tests, and make mitigation recommendations.) (MN)

ED 386 585

WORK-BASED LEARNING: LEARNING TO WORK; WORKING TO LEARN; LEARNING TO LEARN

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

A Zuckerman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

By:

Lori Strumpf, President,
Strumpf Associates/Center for Remediation Design

Developed with the assistance of
Kristine Mains, Associate,
Strumpf Associates/Center for Remediation Design

October, 1994

CE 065 641

BEST COPY AVAILABLE

WORK-BASED LEARNING:
LEARNING TO WORK; WORKING TO LEARN; LEARNING TO LEARN
by Lori Strumpf, President, Strumpf Associates

Implications of ORGANIZATIONAL DEVELOPMENT for Youth Programs

All of us have heard the news...to be competitive and productive in a changing world economy, American businesses will have to move toward becoming high-performance workplaces that manage for quality. This paper examines how work-based learning strategies - **those that integrate work and learning at the workplace** - can be powerful strategies in assisting youth to develop the skills required for changing workplaces.

HIGH PERFORMANCE WORKPLACES: CHANGING THE WAY WORK IS ORGANIZED

High performance workplaces were first discussed in America's Choice: High Skills or Low Wages. As identified in that report, high performance workplaces organize the management and the production of work based on several key tenants (See Appendix A). Essentially, in a high performance workplace workers work in teams and share responsibility for making decisions about how their work gets done. The roles of managers shifts from decision-makers to decision-causers. High performance organizations focus on preventing problems by continuously evaluating and improving upon what they do and how they do it. The improvements made are based upon the quality of the product (or service) and the process. Finally, quality is measured both qualitatively and quantitatively.

This change in how work is organized serves two purposes: to increase the performance of workers; and, to increase the quality of the product. This change has a least two critical effects, first on the definition of quality, and on the skills all workers need to function and produce work in this type of environment.

DEFINING QUALITY

Quite simply, quality is the attributes of a product or service to which the customer attaches value. American business has long defined quality from an internal perspective -the expectations of quality were determined by the company itself.

To move toward managing for quality, organizations must engage in a new set of tasks. These tasks include: 1) identifying the customer(s) both internal and external ; 2) collect customer

BEST COPY AVAILABLE

feedback about what they value about the product/service; and 3) learn how to use that information to improve the **process (how the work gets done)** and the **product (what the work is).**

THE SKILLS WORKERS NEED

To function effectively in this "new organization", workers at all levels of the company will perform a variety of tasks, be responsible for the quality of their products/services, and be required to shift their thinking in regard to how they do what they do. In the end, organizations that are moving in this direction are looking at drastically changing the *organizational culture* --how business gets done --the way they do what they do. The **how** is radically different even if the **what** stays the same.

To be able to produce in this "new" organization, workers need a different set of skills than have been traditionally required in hierarchal organization. The job tasks and responsibilities will require workers from the front line to the CEO to plan, problem-solve, and make decisions. For the front line worker these may be an entirely new set of skills. For the CEO, the skills may not be new, but their role in the process will shift. For both, the skills must be used consistently, at higher levels than before, and in different ways.

The Secretary's Commission for Achieving Necessary Skills (SCANS)

In 1991 the Secretary of Labor appointed a commission of private sector representatives, educators and national experts to identify those skills or *competencies* required by a successful worker in high performance organizations. The SCANS Report for America 2000 identified five competency areas as being critical to a worker's success in jobs from the shop floor to the executive suite.

The SCANS commission also identified and re-defined the **basic skills, thinking skills, and personal qualities** --*SCANS Foundation Skills*-- needed for solid job performance. (See Appendix B). The three-part foundation and the Competencies are critically integrated with one another --the Foundation Skills and Competencies are not sequential but concurrent skills that are being learned and practiced. The Competencies provide the work context through which the Foundation Skills can be learned.

In the past employers suggested that they needed eager employees willing to work hard, arrive on time and who possessed a positive attitude. -The SCANS research reveals that employers now require and expect employees to function in a high-performance work environment --one in which workers must make decisions, solve problems, think critically, reflect upon the quality of their

work, recognize and respond to customer needs constantly, and make improvements upon the quality of the product or service provided.

If programs serving youth are going to make a difference in their lives for the long term, than these skills become the foundation upon which all teaching and learning and assessment strategies must be built. If not, on the skill side of youth development approaches, youth will not adequately be prepared to work in the economy of the 21st century.

A SKILLS MISMATCH

Traditional learning environments and methodologies are not facilitating the learning of these skills (SCANS) for the vast majority of learners. According to a recent survey, Adult Literacy in America , 90 million adults (over the age of 16) demonstrate low levels of literacy. Even though many people do not perceive themselves as 'at risk', the findings show that adults with lower literacy skills are far less likely to work full-time, to earn high wages or to vote.

The survey assessed adults on three different literacy skills - prose, document, and quantitative. The assessment differs from a traditional approach to literacy because the items - identified as tasks - represent a broad range of literacy demands encountered in daily life. Literacy skills are measured within the context of how they are used to complete sets of tasks.

The findings include:

- The literacy levels of young adults ages 21 to 25 was 11 to 14 points lower than in 1985
- Nearly 50% of all adults (Almost 100 million of 191 million) perform in the lowest 2 literacy levels
- 21 to 23 percent (approximately 40 million) in level 1
- 25 to 28 percent (50 million) in level 2
- 21 to 32 percent (61 million) in level 3
- 18 to 21 percent (34 to 40 million) in top two levels

In 1990, the U. S. Department of Labor conducted a survey of ES/UI and JTPA populations. The results are strikingly similar:

- 1 in 8 is at the lowest level of literacy in terms of dealing with documents. They are likely to have continuing difficulty in securing stable employment at adequate earnings.

- 1 in 3 is at level 2. They are in a marginal zone.

- Overall the survey found that as many as 50% of JTPA trainees and 43% of people receiving Unemployment Insurance or services of the Employment Service have literacy skills insufficient for todays jobs.

One of the major implications of this research connects to the way that people learn. Many of the survey respondents had the ability to complete traditional literacy problems, such as adding and subtracting and identifying simple words.

However, individuals could not readily transfer the same literacy skill when asked to apply it to a different but similar life-related task. When the task is contextual - the skills are embedded inside authentic situations - many adults can not use the skills they currently have.

This news does not bode well for an individuals economic health if the changing workplace will require higher levels of skill to perform entry level jobs and beyond.

Implications of LEARNING THEORY for Youth Programs

LEARNING BY DOING: Head and Hand Working Together

We know a lot about they way people learn. Countless research indicates that learners learn by doing. We know that theory, isolated from practice, and vice versa is the least effective way for people to learn.

Sue Berryman, of the World Bank in Apprenticeship as a Paradigm for Learning, provides an example of how new information on how people learn is affecting our basic understanding of this critical issue. She refutes five common assumptions about learning:

- *Assumption:* People predictably transfer learning.
  Reality: True transfer requires the opportunity to practice skills in a wide variety of contexts.

- *Assumption:* Learners are passive vessels.
  Reality: Knowledge cannot be poured into someone. Learners need to be active in processing the information.

- *Assumption:* Learning is the strengthening of the bond between stimuli and correct response.
  Reality: There are many correct answers in most

situations.

- *Assumption:* Learners are blank slates onto which knowledge is inscribed.
  Reality: Prior knowledge and experience create "hooks" on which people "hang" new information.

- *Assumption:* Skills and knowledge should be acquired independently.
  Reality: Knowledge is not useful unless it can be used through a set of skills such as reading, communication, etc., to accomplish some task or set of tasks.

One leading cognitive scientist, Tom Sticht, has conducted important research on the way people learn and how they transfer learning to the tasks that they encounter. Sticht and others conclude that teaching basic skills -- reading, writing, math, and communication -- in a context where learners must integrate their skills and knowledge to solve problems (which is true to life and work situations) will result in optimum learning gains.

For example, when a young person has difficulty with multiplication of decimals, she will learn the basic skills necessary when she applies those multiplication skills to a specific context, like calculating discounts on clothes. Many learners, especially young people, ask the questions, "Why is this important? How does this apply to **my** life?" The specific message behind those questions are, "Teach me how to do something that I can use." As we prepare young people for the workforce of tomorrow, we must keep the way they learn best in mind--that is, they learn best when their head and hands are engaged in the learning process.

WORKBASED LEARNING - TRADITIONAL YOUTH PROGRAMS vs. LEARNING RICH APPROACH

The new "enriched" approach to learning for young people incorporates a variety of best practices. The notion of workbased learning has evolved, from models that promote learning in a classroom combined with an "**at** work experience", like cooperative learning to strategies of learning **through work while working**.

Workbased leaning has as its goal the creation of learning rich opportunities for young people which focuses on the skills necessary for quality, high-performance workplaces.

Workbased learning offers an opportunity to learn and practice these skills through action - using skills and knowledge to engage in relevant and purposeful activity. And through reflection - constantly reflecting on the skills being used and how to improve through improving the quality of the work at hand.

The **purpose** of a learning rich approach to work experience is:

To assist young people in building:

- a specific set of skills necessary for high performance workplaces, and
- knowledge of the world of work.

Instead of make-work or discrete specific job tasks (like answering the phone, xeroxing, filing) young people will plan, organize and carry out projects which are a combination of tasks (which might include answering the phone, filing paperwork, etc.) that will require planning, problem-solving and decision making skills.

Whereas traditional youth programs create an artificial distinction between learning and work by separating the two environments, a learning rich work experience integrates learning and work in an applied approach, giving the youth an opportunity to apply what they learn to actual work at the worksite. Young people learn by doing as their supervisors make connections between the skills and knowledge they are learning through work.

In past education or training programs, youth were assigned to either: 1) a classroom instructional program if they needed to continue working on their academic skills, or; 2) to a worksite to acquire world of work knowledge and technical skills.

Workbased learning strategies promote the blurring of distinctions between where **and** how learning takes place.

The following chart shows the difference between what the "old way" or traditional program looks like as opposed to the "new way" or learning rich approach.

TRADITIONAL PROGRAM vs. LEARNING RICH APPROACH

Traditional Program	Learning Rich Approach
Instructor/worksite supervisor knows and gives all answers to young people.	Instructor/worksite supervisor coaches young people through the process of finding solutions (answers).
Young people work as individuals.	Young people work on teams as well as on an individual basis.
Instructor/worksite supervisor plans all the activity/work.	Instructor/worksite supervisor has a notion of the work and skills required in order to coach young people in planning activities/work.
Classroom and Worksite learning are disconnected from one another. Learning opportunities between classroom and worksite are un-related.	Work and learning are totally integrated at the worksite. Learning opportunities are seized as the work occurs.
Instructor/worksite supervisor organizes classroom/workspace for young people.	Young people evaluate how learning/working is best organized and structure space accordingly.
Reading, writing, and math are treat as separate and apart from work in a classroom setting. Listening and speaking often missed in the learning.	Reading, writing, math **and communication** skills (SCANS Basic Skills) are integrated as necessary for problem solving. Listening and speaking are fundamental parts of the learning.
Thinking usually is theoretical and "academic"; usually unapplied to work context.	Thinking involves problem solving, reasoning, and decision making (SCANS Thinking Skills) through work context.
Young people are expected to conform to instructor's/worksite supervisor's behavioral expectations; integrity and honesty are **monitored**; young person's self esteem often is poor.	Youth are expected to be responsible, sociable, self-managing, and resourceful; integrity and honesty are monitored within the social culture of the team; students' self-esteem is high because they are in charge of their own work and learning. (SCANS Personal Qualities)

As the chart comparing the two approaches indicates, a learning rich approach to youth programming begins with the following premises:

1) Young people are capable of responsibly performing complex tasks if the adult who directly supervises them is properly supportive.

2) With encouragement and guidance, supervisors can invent "learning rich tasks" that are useful to the employing organization and instructive to the youth.

3) The SCANS competencies can be learned while performing learning rich projects. It is difficult to define responsible and useful tasks that do not teach one or more of the SCANS Competencies and Foundation Skills.

4) **Worksites** emphasize training in the *SCANS Competencies & Foundation Skills*. Organizations will model becoming learning organizations. **Supervisors** will become **coaches** and **workers** will be **learners.**

QUALITY YOUTH PROGRAM DESIGN PRODUCES QUALITY RESULTS

Based upon work and learning program research, nine key elements of a learning rich work experience have been identified.

KEY ELEMENTS OF A LEARNING RICH WORK EXPERIENCE

- Top Down Commitment
  from all involved (programs and worksites)
- Real Work Projects of Value
  not "make work"...the work produces a product and\or service that the organization and\or the community needs
- Caring and Skilled Adult(s)
  to model behaviors and to coach young people through the process
- One Dedicated Staff Member to Coordinate
- Up-front Training for Staff
  staff who work directly with the young people
- Orientation for Youth to Set High Expectations
- Seizing Learning Opportunities as They Occur
- On-Going Problem-Solving with Staff
- Feedback Sessions with Youth
  "What skills are you learning to do? "

Taking into consideration the comparison between traditional youth programs and learning rich approaches to work experience and key elements of a learning rich work experience, what does a learning rich work experience really look like?

WHAT DOES A LEARNING-RICH WORK EXPERIENCE LOOK LIKE?

Supervisor/Crew Leader:

- **guides, coaches, and facilitates**
- answers most questions with another question, helping youth <u>think through</u> the steps involved in each task; shows young person how while modeling appropriate behavior, then coaches youth through process, noting significant steps

Young People:

- **work as a team or in a work group**
- develop work schedule & work plan as a team; take responsibility for carrying out the project by identifying what tools, supplies, time, resources, and people are involved; review the quality of their work; review plan and make changes as necessary to ensure timely, efficient, quality work.

One of the most important factors in creating high performance worksites is expecting the youth to perform real work projects -- real work that has meaning and value to the organization. What follows are examples of four real work projects that youth are engaged in as summer jobs.

During the first quarter of 1994, the National Association of Counties (NACo) called upon four counties to launch a unique Summer Youth Radon Prevention Initiative to prepare youth for high performance workplaces in the environmental health field.

During the Summer Youth Radon Prevention Initiative 1994, local public health or environmental departments will employ young people to undertake specific projects that the teams of youth will develop and manage. Through local federally-funded summer youth employment programs, young people will build the skills necessary for success in high performance workplaces while building their knowledge of environmental health issues and professions. A unique aspect of this initiative is a link to

community service. Upon completion of their summer experience, youth will continue to participate in community service throughout the year, becoming community advocates for radon prevention. This initiative links training, environmental health issues, and community service.

One of the most important factors in creating high performance worksites is expecting the youth to perform real work projects -- real work that has meaning and value to the organization. These work projects provide youth an exciting and challenging way to learn and develop SCANS skills and basic academic skills.

LEARNING RICH WORKBASED PROJECT EXAMPLES

SITE	PROJECT
Erie County *New York*	Create an Information Campaign For Peers
Fulton County *Georgia*	Develop a Marketing Strategy to Reach Non-Mitigators Using Information From the Existing Tracking System and Analyze Test Results to Identify "Hot Spots" -- high concentrations of radon
Hennepin County *Minnesota*	Develop Workplan for Conducting Radon Tests in Schools, Conduct Tests, and Report Results
Jefferson County *Colorado*	Create and Education Campaign for Day Care Centers, Conduct Tests, and Make Mitigation Recommendations.

In addition to real work for pay through their summer job, young people will be provided opportunities to continue these projects throughout the year as a community service and as a service learning opportunity. As real **work** during the summer, the projects provide the **context for learning.** As they continue the work as a service to the community, **service** provides the **context for learning. Appendix C** illustrates the work and learning that can occur through a workbased learning approach.

THE WORK-LEARNING PROCESS: How to Sell Young People and Employers

This approach to work and learning violates the expectations that most young people bring to both the learning environment and the work environment. Young people must be taught to expect different things. This often occurs through some kind of orientation **prior** to being placed at a work-based learning site.

However, even when discussions have occurred with youth about how this experience with work and learning will "look and feel" different, they are unlikely to believe it. The real selling

point for young people is when they actually **experience** it. This means that initially at the worksite young people will still look to supervisors to tell them what to do. Supervisors must not take the bait. They must continue to send the message (through coaching) that it is part of the work for the worker\learner and their team to **decide** what to do.

Only when youth believe that allowing them to plan and problem solve is not just a futile exercise will they be sold. Up to now their school experiences suggests that they will ultimately be told what to do anyway. When asked to describe the difference between their work-based learning experience and school, young people say:

> ***My head hurts here, I have to think so much,***
>
> ***They really let us do what we plan to do, in school we are always told what to do,***
>
> ***Somebody really must think I'm smart because they are always asking me what I think. My teacher never asks me that in school.***

Selling employers needs top level commitment. The CEO of the company must be engaged and want to provide this type of work and learning activity for young people. Employers are often immediately sold if their organization is going through some type of managing for quality effort. They immediately see the link between the skills their own employees need and the skills this strategy is trying to impart to future workers.

It is much harder to engage an employer that has no quality perspective at all. However, if our own forecasts about the changing nature of the workplace are accurate, soon there will not be many employers in this category.

THE WORK-LEARNING PROCESS: What the Worksite Supervisor Should Know

There are many ways to supervise people and get a job done. And there are many ways to teach people new skills. Supervising a learning-rich task requires a supervisor who is more of a coach than a boss. Supervisors must ask themselves the following eight (8) questions.

1. What work needs doing that is of value to the organization?

» Make sure that the project and tasks of the project have some real benefit to the organization. People

know when they are doing make-work. Real goals foster real effort. Real accomplishments foster pride and higher self-esteem.

2. **How will young workers be directed to do the task?**

» The key here is to offer advice rather than answers. That advice usually comes in the form of a question that facilitates the youth to arrive at their own conclusions. As an expert we want to share all of our knowledge of our particular discipline. However, the best way for young people to learn is through exploration. This does not mean that answers are never given. However, in most cases, there are multiple options, multiple solutions, and multiple answers. The responsibility is to coach the young people to find the solutions...not give **a** solution.

3. **What should the young workers learn?**

» In addition to learning the skills they need to accomplish the project at hand, young people are learning skills that are applicable to a broad range of jobs. Encourage young people to think about what other ways they might use the skills they are practicing at the moment. Ask young people to tell each other and supervisors what skills they think they are learning.

4. **How will they best learn it?**

» We know from research that people learn best in an authentic context --that is, they learn skills by using the skills, and by reflecting on what they have done. As young worker progress through their work, have them reflect on their work and learning in a journal, in group discussions, and on their own.

5. **What is the supervisors role in this process?**

» There are at least two roles: the overseer and the coach. The **overseer** makes sure that the work gets done, and that the young people understand the consequences if it does not. It is important that both the supervisor and the youth agree on clearly articulated expectations. The second role is much more complex, and one that we suggest is a critical element to the success of both the supervisors and young people's work experience. In the role of **coach,** adults encourage young people through the process of what they are doing and learning. The coach prods young workers to learn from and improve their performance. The coach asks questions to encourage young people to think about

possible solutions rather than giving answers. If you give them answers, they will learn not to find their own. If you give them thoughtful questions, they will learn to seek and find the information they need to produce solutions.

6. **What will supervisors get out of the experience?**

» It has often been said that one learns a subject best by teaching it. Moreover, for many this will be an opportunity to acquire or improve their own supervisory skills. Last but not least, real work is accomplished that is valued by the organization.

7. **What will the youth get out of the experience?**

» This approach yields multiple benefits for the youth. The young people develop a sense of self-worth and confidence in their ability to learn. They also get real work experience. In addition, they expand their horizons by seeing "what work looks like" and in turn, begin to see themselves working successfully within in an organization or company. Young people also experience the value of learning and understand that learning does not stop when one enters the workplace.

8. **What will the community get out of the experience?**

» The community benefits through providing opportunities for young people to become productive citizens.[1]

KEY INGREDIENTS TO WORKBASED LEARNING

- Insure that the learning contributes to building skills and knowledge rather than simply being exposed to work. It is the NATURE of the work experience that makes it workbased learning and not simply the "being" at a worksite.

- Insure employer participation. This learning strategy requires it in at least two ways: employers identify the real work that needs to get done and they provide supervision of the young workers. The intensity of their involvement at work can vary - from providing the technical expertise of the content of the work with program staff being on site daily to provide the intensive coaching, to providing all supervision as a coach.

---

[1]Adapted from Developing Learning-Rich Tasks for Summer Youth Employment Programs: Value the Youngster, Value the Work, Johns Hopkins University, January 1994

- Insure careful planning of what young people will learn and how they will learn. The learning opportunities involved in the work at hand must be explicitly planned for and continually recognized as "moments of learning".

- Insure competent supervision, coaching, and mentoring by adults. Training of program staff and worksite supervisors on facilitation and coaching skills is a must. These skills are not innate and must be learned and practiced.

- Insure assessment and documentation of learning through the actual demonstration of skills and knowledge and the creation of authentic work products.

- Insure opportunities for learner\workers to reflect on the knowledge and skills they are gaining and how to improve upon them.

- Insure that connections are made between what is being learned in school based settings (for those in them) and at work.

- Insure school credit for workbased learning at the secondary and post secondary levels.[2]

CONCLUSION

If programs for youth are going to be effective in moving youth through a developmental continuum that results in high self worth and a high level of skill that prepare young people to become socio-economically self sufficient in the 21st century, **we must**:

* transform worksites by creating learning-rich work environments - go beyond providing opportunities for youth to make money and create project oriented work that is of value to the work place and allows the youth to plan and make decisions around the work project

* transform classrooms by providing contextual learning opportunities - where knowledge and skills are integrated into meaningful contexts and the "doing" of the task\project\activity is the end result as opposed to "acquiring" knowledge and skills in isolation from the content that give the skills meaning

* require in all instances that all learners use their minds well - by being encouraged to think about solutions to

---

[2] These are adapted and expanded upon by this author from Opening Career Paths for Youth: What Can Be Done? Who Can Do It? by Stephen Hamilton and Mary Hamilton.

authentically presented problems

* invest in longer term strategies which provide opportunities to move youth from where they start to the level of functional skills required

* transform assessment strategies - move to authentic performance based approaches which allow the learner to demonstrate a depth of understanding not measured by traditional approaches

* establish a vision that all youth can learn - design programs and assessment strategies that identify and build on abilities and that set high expectations that all the youth can participate in and learn how to plan, problemsolve and make decisions while working in a team to produce quality results.

RECOMMENDATIONS

The U.S. Department of Labor can support and encourage workbased learning approaches by:

- promote the SCANS framework and make the connection to it and high performance workplaces - most public systems are not sure how the two fit

- provide incentives for small and medium size businesses to become engaged in the quality movement - unfortunately the Baldrige Award does not seem to provide an incentive to these firms

- provide direction on how to transform teaching, learning and assessment strategies

- create incentives for teachers to job shadow in the private sector regularly - teachers need to get credit and money for trying to understand the skills required at work so that they can serve as coaches and create contextual learning approaches in the classroom, linked to a workbased experience

- create incentives for worksite supervisors (those employed by the workplace) to expend this level of effort - use business organizations to send the message that this is a way to develop their own skills; provide some subsidy to a business during the first year with a commitment to continue beyond the subsidized time.

APPENDIX A
HIGH PERFORMANCE WORKPLACES - WHAT IS DIFFERENT?

CONVENTIONAL ORGANIZATIONS	HIGH - PERFORMANCE ORGANIZATIONS
are **internally focused** and product oriented	are customer focused and **process and product** oriented
work is produced individually or **in groups*** - **responsibility** for the work is with the individual\group but the real **authority** is with those "higher -up"	work is produced individually or in **teams*** - **responsibility and authority** for the quality of the work is with the individual\team, building on the notion that those closest to doing the work ought to make decisions about the work
management is often in a "crisis management mode" - **management fixes** problems as they arise	create a structured approach to identifying and solving problems - utilizing the workforce to identify and solve the problems
mistakes are **inspected** out -the quality of a product/service is **inspected** in at the end of the process of producing the product or service, or at best at intermittent times along the way	**prevention** of mistakes is key - the quality of a product/service is everyones' responsibility every day, decisions about **preventing** mistakes and/or improving the quality is **expected** from workers everyday
making improvements in the product or service is an **annual activity**	mechanisms are in place to make improvements in the quality of the product/service **continuously**
organizational decisions - ie what needs to be done, how to do it, what needs to happen to fix a problem, what is the problem - are often made based on **"gut feelings"**	organizational decisions are made **based on facts** - mechanisms are in place to collect data to be used in decision making
think in terms of **events or a series of events** therefore becoming "opportunistic" - taking advantage of all opportunities that come along with little connectedness between the activities created	think in terms of **systems** - creating a vision and only taking advantage of opportunities that move the vision forward; leaders create a sense of connectedness of all activities for workers by regularly sharing the vision
train workers on specific content **intermittently**	create a **learning organization**
involve only a few - usually top and mid-managers - in the decision making processes	**involve all workers** in the planning, problem-solving, data collection and continuous improvement processes

*the difference between a group of workers and a team is the team is held accountable as a functioning unit within the larger organizational context.

APPENDIX B

THE SCANS COMPETENCIES

RESOURCES

Allocates Time. Selects relevant, goal-related activities, ranks them in order of importance, allocates time to activities, and understands, prepares, and follows schedules.

Allocates Money. Uses or prepares budgets, including making cost and revenue forecasts, keeps detailed records to track budget performance, and makes appropriate adjustments.

Allocates Material and Facility Resources. Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.

Allocates Human Resources. Assesses knowledge and skills and distributes work accordingly, evaluates performance, and provides feedback.

INTERPERSONAL

Participates as a Member of a Team. Works cooperatively with others and contributes to group with ideas, suggestions, and effort.

Teaches Others. Helps others learn.

Serves Clients/Customers. Works and communicates with clients and customers to satisfy their expectations.

Exercises Leadership. Communicates thoughts, feelings, and ideas to justify a position, encourages, persuades, convinces, or otherwise motivates an individual or groups, including responsibly challenging existing procedures, policies, or authority.

Negotiates. Works towards an agreement that may involve exchanging specific resources or resolving divergent interest.

Works with Cultural Diversity. Works well with men and women and with a variety of ethnic, social, or educational backgrounds.

INFORMATION

Acquires and Evaluates Information. Identifies need for data, obtains it from existing sources or creates it, and evaluates its relevance and accuracy.

Organizes and Maintains Information. Organizes, processes, and maintains written or computerized records and other forms of information in a systematic fashion.

Interprets and Communicates Information. Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multi-media methods.

Uses Computers to Process Information. Employs computers to acquire, organize, analyze, and communicate information.

SYSTEMS

Understands Systems. Knows how social, organizational, and technological systems work and operates effectively within them.

Monitors and Corrects Performance. Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system/organization, and takes necessary action to correct performance.

Improves and Designs Systems. Makes suggestions to modify existing systems to improve products or services, and develops new or alternative systems.

TECHNOLOGY

Selects Technology. Judges which set of procedures, tools, or machines, including computers and their programs, will produce the desired results.

Applies Technology to Task. Understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems.

Maintains and Troubleshoots Technology. Prevents, identifies, or solves problems in machines, computers, and other technologies.

SCANS FOUNDATION SKILLS
A Three-Part Foundation

Basic Skills: **Reads, writes, performs arithmetic and mathematical operations, listens, and speaks**

A. **Reading** - Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules

B. **Writing** - Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts

C. **Arithmetic/Mathematics** - Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques

D. **Listening** - Receives, attends to, interprets, and responds to verbal messages and other cues

E. **Speaking** - Organizes ideas and communicates orally

Thinking Skills: **Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons**

A. **Creative Thinking** - Generates new ideas

B. **Decision Making** - Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative

C. **Problem Solving** - Recognizes problems and devises and implements plan of action

D. **Seeing Things in the Mind's Eye** - Organizes, and processes symbols, pictures, graphs, objects and other information

E. **Knowing How to Learn** - Uses efficient learning techniques to acquire and apply new knowledge and skills

F. **Reasoning** - Discovers a rule or principle underlying the relationship between two or more objects and applies it in solving a problem

Personal Qualities: **Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty**

A. **Responsibility** - Exerts a high level of effort and perseveres towards goal attainment

B. **Self-Esteem** - Believes in own self-worth and maintains a positive view of self

C. **Sociability** - Demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and on-going group settings

D. **Self-Management** - Accurately assesses own knowledge, skills, and abilities, sets well-defined and realistic personal goals; exhibits self control and responds to feedback unemotionally and non-defensively

E. **Integrity/Honesty** - Can be trusted; recognizes when faced with making a decision or exhibiting behavior that may break with commonly-help personal or societal values; chooses ethical course of action

APPENDIX C

Create an Education Campaign for Day Care Centers, Conduct Tests, and Make Mitigation Recommendations

The Project

In this project, young people schedule time and organize the resources and information necessary to develop an education campaign, conduct radon tests, and make appropriate mitigation recommendations. The education campaign in this case is around radon testing to day care centers, but could be applied to any environmental awareness issue. Young people will be responsible for **creating, managing, and carrying out a workplan** for this project.

The premise of this project is based upon the idea that young people understand what methods and language will best communicate information to day care centers as well as have the ability to conduct radon tests and make recommendations for mitigation.

The Young People

This project could be planned and completed by a team of 6-8 young people. As this project involves some tasks that may be carried out at the same time, the youth may decide to form smaller teams of 3-5 to carry out the work. It is the purpose of this approach the **youth decide** what work must be carried out, how the work will be carried out, and who will carry out the work. If they do not choose to break down into smaller groups, allow them to discover what structure works bet for them given the specific timeframe.

The Work and Learning

For this project it is recommended that youth plan, organize, and complete the following tasks.

» The TASKS are general steps it takes to create and convey an information campaign (the **work** involved in the project). As the young people create their work plan, they may create or eliminate steps. The following TASKS listed may or may not be the steps the youth create in their workplan.

» The SKILLS are the SCANS Competencies practiced and demonstrated while youth complete the tasks (the **learning** involved in the project).

The SCANS skills involved in creating and conveying an information campaign listed below are the primary skills that the youth will be practicing and demonstrating. As young people work through this project, it is recommended that the supervisor point out these skills.

» For example, Dominic, a 16 year old male, may be responsible, as decided with his team, for gathering resources that have been used in previous information campaigns. He may have a box of resources --pamphlets, letters, videos, etc. that he has gathered and organized. As he is organizing this material, you might say, "That seems like a lot of information. How did you organize it all? What system did you create to do that? Could you show me how it works? (He responds.) You say, "Creating a system to organize all that information...those are important SCANS skill..."

As youth become more aware of the SCANS skills they are learning, you might have the youth think about and identify the skill s/he practiced and/or demonstrated during the day.

» For example, you might have youth keep a daily journal of their work and learning, where they list the tasks and skills required to complete that task, much the same as is listed here in the PROJECT DESCRIPTION. On a regular basis, once a week, or as the schedule allows, during team meetings or team time, have the young workers reflect upon their work and discuss the tasks and skills involved. Encourage youth to observe one another while working and then have them analyze and identify each other's skills. This is a perfect opportunity for young people to learn from one another.

THE WORK AND LEARNING OF THE PROJECT

TASKS -- The Work	SCANS SKILLS -- The Learning
Identify day care centers for testing	•participates as a member of a team •negotiates to arrive at a decision •acquires and evaluates information
Develop presentation(s) on radon prevention and testing	•allocates time and materials •organizes and interprets information •exercises leadership •selects and applies technology
Deliver presentation(s)	•communicates information •teaches others •selects and applies technology
Schedule time for radon testing	•allocates time and human resources
Create workplan for testing all day care centers	•designs systems •allocates time, money, material & human resources •negotiates to arrive at a decision
Conduct radon tests	•acquires and maintains information •works with cultural diversity
Gather and organize test results	•organizes information •uses computers to process information •applies technology to task
Analyze test results	•evaluate and interpret information •uses computers to process information •applies technology to task
Communicate results of tests	•allocate materials •communicates information •serves customers •teaches others

This curriculum framework was developed by Strumpf Associates/Center for Remediation Design for the National Association of Counties.

Evaluate effectiveness of project	•interprets and communicates information •monitors and corrects performance •participates as a member of a team •serves customers

TASKS -- The Work	LITERACY SKILLS -- The Learning
Identify day care centers for testing	Reading and Writing •cross-referencing information •locating information •combining information from multiple sources Oral Communications •eye contact •speaking •listening •clarifying information
Develop presentation(s) on radon prevention and testing	Reading and Writing •identifying factual details and specifications •spelling task related words •using text and visual materials •writing a summary of key points Arithmetic/Mathematics •determine ratios •compute averages Oral Communications •eye contact •speaking •listening •clarifying information

This curriculum framework was developed by Strumpf Associates/Center for Remediation Design for the National Association of Counties.

Deliver presentation(s)	Reading and Writing •using charts and forms •cross-referencing information Oral Communications •eye contact •speaking •listening •clarifying information
Schedule time for radon testing	Reading and Writing •cross-referencing information •combining information from multiple sources •skimming and scanning Arithmetic/Mathematics •performing computations in units of time •determine approximations by estimating time Oral Communications •eye contact •speaking •listening •clarifying information
Create workplan for testing all day care centers	Reading and Writing •combining information from multiple sources •writing a summary of key points •spelling technical terms/task related words Arithmetic/Mathematics •performing computations in units of time •determine approximations by estimating time Oral Communications •eye contact •speaking •listening •clarifying information

This curriculum framework was developed by Strumpf Associates/Center for Remediation Design for the National Association of Counties.

Conduct radon tests	Reading and Writing •using common knowledge for safety •follow instructions in sequential order •writing appropriate response on a form Oral Communications •eye contact •speaking •listening •clarifying information
Gather and organize test results	Reading and Writing •locating information •organizing information from multiple sources Oral Communications •eye contact •speaking •listening •clarifying information
Analyze test results	Reading and Writing •making inferences from text •summarizing key points in phrases or simple sentences Arithmetic/Mathematics •determine ratios •compute averages Oral Communications •eye contact •speaking •listening •clarifying information
Communicate results of tests	Reading and Writing •using text and visual materials •spelling task related words •recording information in key phrases •writing key technical words Oral Communications •eye contact •speaking •listening •clarifying information

This curriculum framework was developed by Strumpf Associates/Center for Remediation Design for the National Association of Counties.

Evaluate effectiveness of project	Reading and Writing •selecting an order of operations •summarizing key points •cross-referencing within and across information sources Oral Communications •eye contact •speaking •listening •clarifying information

This curriculum framework was developed by Strumpf Associates/Center for Remediation Design for the National Association of Counties.